

## SEQUENCE LISTING

<110> Lo, Wei-Yu Lo, Ming Ching Liau, Pei-Ru

<120> LAC SHUTTLE VECTORS

<130> 12875-002001

<140> 09/778,516

<141> 2001-02-07

<150> TW 89110235

<151> 2000-05-26

<160> 6

<170> FastSEQ for Windows Version 4.0

<210> 1

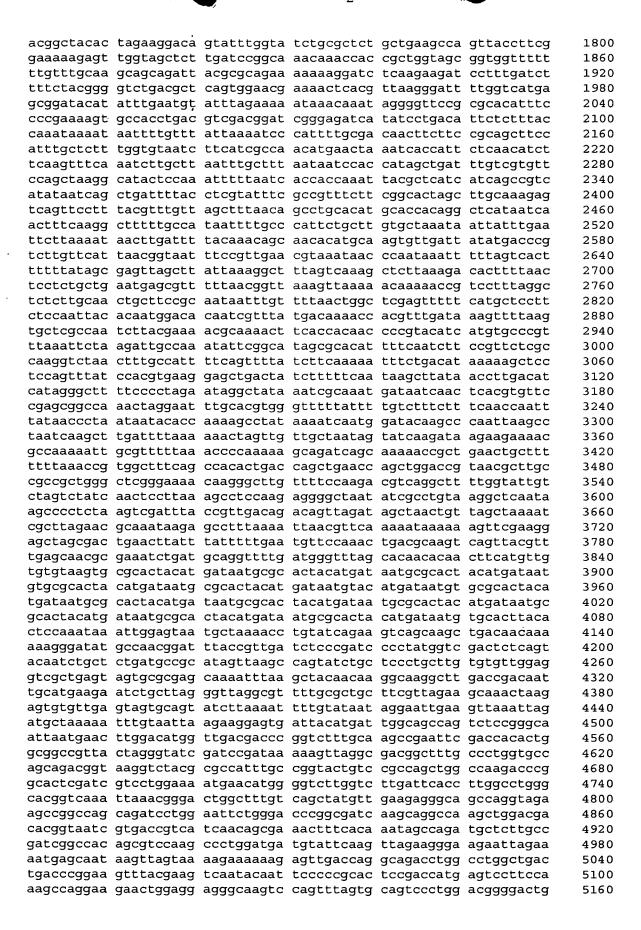
<211> 8115

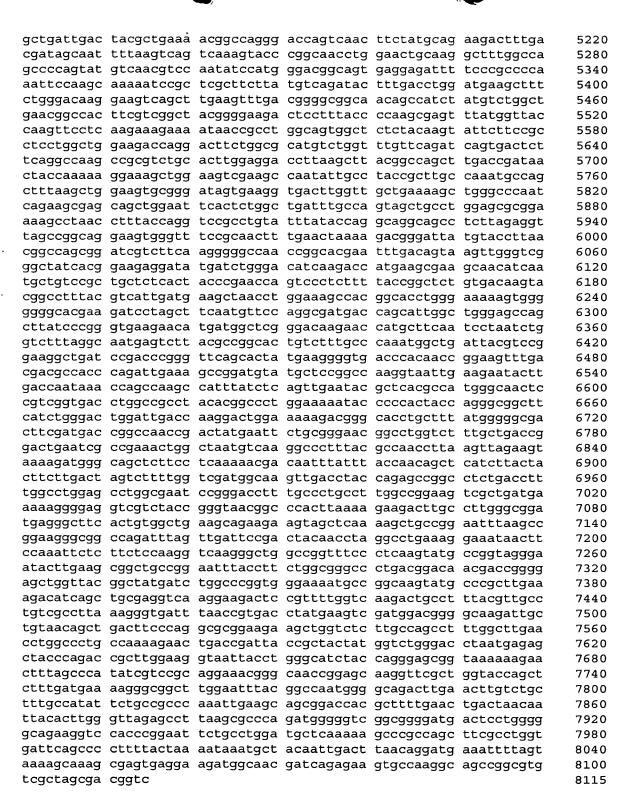
<212> DNA

<213> Lactobacillus plantarum

<400> 1

gatgtacggg ccagatatac gcgttgacat tgattattga ctagttatta atagtaatca 60 attacggggt cattagttca tagcccatat atggagttcc gcgttacata acttacggta 120 aatggcccgc ctggctgacc gcccaacgac ccccgcccat tgacgtcaat aatgacgtat 180 gttcccatag taacgccaat agggactttc cattgacgtc aatgggtgga ctatttacgg 240 taaactgccc acttggcagt acatcaagtg tatcatatgc caagtacgcc ccctattgac 300 gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt atgggacttt 360 cctacttggc agtacatcta cgtattagtc atcgctatta ccatggtgat gcggttttgg 420 cagtacatca atgggcgtgg atagcggttt gactcacggg gatttccaag tctccacccc 480 attgacgtca atgggagttt gttttggcac caaaatcaac gggactttcc aaaatgtcgt 540 aacaactccg ccccattgac gcaaatgggc ggtaggcgtg tacggtggga ggtctatata 600 agcagagete tetggetaac tagagaacee actgettaet ggettatega aattaataeg 660 actcactata gggagaccca agcttggtac cgagctcgga tccactagta acggccgcca 720 gtgtgctgga attctgcaga tatccatcac actggcggcc gctcgagcat gcatctagag 780 ggccctattc tatagtgtca cctaaatgct agagctcgct gatcagcctc gactgtgcct 840 tetagttgee agecatetgt tgtttgeece teeceegtge etteettgae eetggaaggt 900 gccactccca ctgtcctttc ctaataaaat gaggaaattg catcgcattg tctgagtagg 960 tgtcattcta ttctgggggg tggggtgggg caggacagca agggggagga ttgggaagac 1020 aatagcaggc atgctgggga tgcggtgggc tctatggctt ctgaggcgga aagaaccagc 1080 tgcattaatg aatcggccaa cgcgcgggga gaggcggttt gcgtattggg cgctcttccg 1140 ettecteget cactgacteg etgegetegg tegttegget geggegageg gtateagete 1200 1260 actcaaaggc ggtaatacgg ttatccacag aatcagggga taacgcagga aagaacatgt gagcaaaagg ccagcaaaag gccaggaacc gtaaaaaaggc cgcgttgctg gcgtttttcc 1320 ataggeteeg eeceetgae gageateaca aaaategaeg eteaagteag aggtggegaa 1380 accegacagg actataaaga taccaggegt ttececetgg aageteeete gtgegetete 1440 etgtteegae cetgeegett aceggatace tgteegeett tetecetteg ggaagegtgg 1500 cgctttctca atgctcacgc tgtaggtatc tcagttcggt gtaggtcgtt cgctccaagc 1560 tgggctgtgt gcacgaaccc cccgttcagc ccgaccgctg cgccttatcc ggtaactatc 1620 gtcttgagtc caacccggta agacacgact tatcgccact ggcagcagcc actggtaaca 1680 ggattagcag agcgaggtat gtaggcggtg ctacagagtt cttgaagtgg tggcctaact 1740





<210> 2

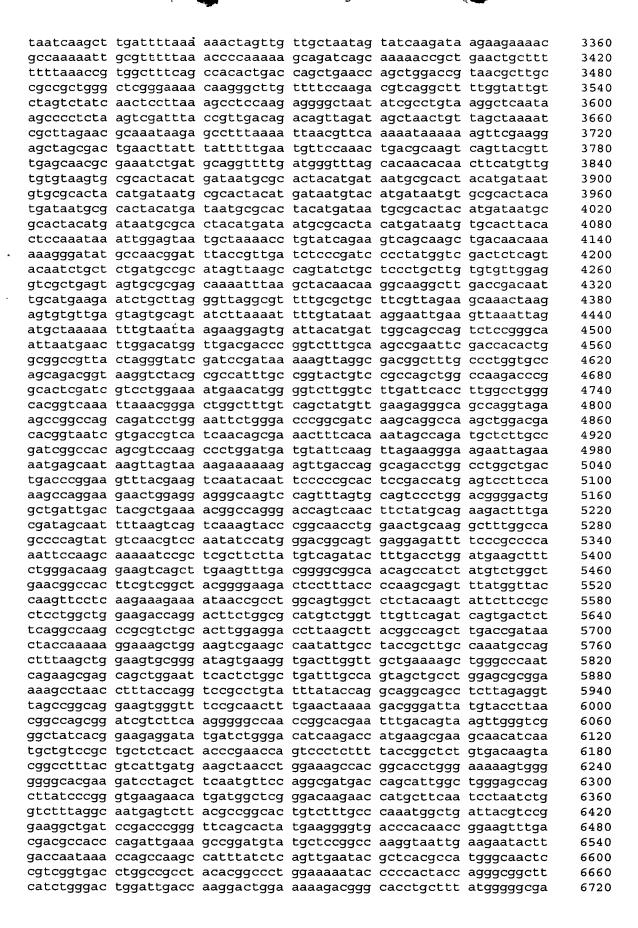
<211> 8115

<212> DNA

<213> Lactobacillus plantarum

<400> 2

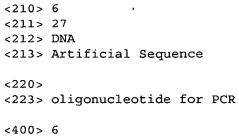
gatgtacggg ccagatatac gcgttgacat tgattattga ctagttatta atagtaatca 60 attacggggt cattagttca tagcccatat atggagttcc gcgttacata acttacggta 120 aatggcccgc ctggctgacc gcccaacgac ccccgcccat tgacgtcaat aatgacgtat 180 gttcccatag taacgccaat agggactttc cattgacgtc aatgggtgga ctatttacgg 240 300 taaactgccc acttggcagt acatcaagtg tatcatatgc caagtacgcc ccctattgac gtcaatgacg gtaaatggcc cgcctggcat tatgcccagt acatgacctt atgggacttt 360 cctacttggc agtacatcta cgtattagtc atcgctatta ccatggtgat gcggttttgg 420 cagtacatca atgggcgtgg atagcggttt gactcacggg gatttccaag tctccaccc 480 attgacgtca atgggagttt gttttggcac caaaatcaac gggactttcc aaaatgtcgt 540 600 aacaactccg ccccattgac gcaaatgggc ggtaggcgtg tacggtggga ggtctatata ageagagete tetggetaae tagagaaeee aetgettaet ggettatega aattaataeg 660 720 actcactata gggagaccca agcttggtac cgagctcgga tccactagta acggccgcca 780 gtgtgctgga attctgcaga tatccatcac actggcggcc gctcgagcat gcatctagag ggccctattc tatagtgtca cctaaatgct agagctcgct gatcagcctc gactgtgcct 840 tetagttgcc agccatetgt tgtttgcccc teccecgtgc ctteettgac cetggaaggt 900 gccactccca ctgtcctttc ctaataaaat gaggaaattg catcgcattg tctgagtagg 960 tgtcattcta ttctgggggg tggggtgggg caggacagca agggggagga ttgggaagac 1020 1080 aatagcaggc atgctgggga tgcggtgggc tctatggctt ctgaggcgga aagaaccagc tgcattaatg aatcggccaa cgcgcggga gaggcggttt gcgtattggg cgctcttccg 1140 cttcctcgct cactgactcg ctgcgctcgg tcgttcggct gcggcgagcg gtatcagctc 1200 1260 actcaaaggc ggtaatacgg ttatccacag aatcagggga taacgcagga aagaacatgt gagcaaaagg ccagcaaaag gccaggaacc gtaaaaaggc cgcgttgctg gcgtttttcc 1320 ataggeteeg eeceetgae gageateaca aaaategaeg eteaagteag aggtggegaa 1380 accegacagg actataaaga taccaggegt ttecceetgg aageteecte gtgegetete 1440 etgtteegae cetgeegett aceggatace tgteegeett tetecetteg ggaagegtgg 1500 cgctttctca atgctcacgc tgtaggtatc tcagttcggt gtaggtcgtt cgctccaagc 1560 tgggctgtgt gcacgaaccc cccgttcagc ccgaccgctg cgccttatcc ggtaactatc 1620 gtettgagte caacceggta agacacgact tategecact ggcagcagec actggtaaca 1680 ggattagcag agcgaggtat gtaggcggtg ctacagagtt cttgaagtgg tggcctaact 1740 acggctacac tagaaggaca gtatttggta tctgcgctct gctgaagcca gttaccttcg 1800 gaaaaagagt tggtagctct tgatccggca aacaaaccac cgctggtagc ggtggttttt 1860 ttgtttgcaa gcagcagatt acgcgcagaa aaaaaggatc tcaagaagat cctttgatct 1920 tttctacggg gtctgacgct cagtggaacg aaaactcacg ttaagggatt ttggtcatga 1980 geggatacat atttgaatgt atttagaaaa ataaacaaat aggggtteeg egeacattte 2040 ccegaaaagt gccacctgac gtcgacggat cgggagatca tatcctgaca ttctctttac 2100 caaataaaat aattttgttt attaaaatcc cattttgcga caacttcttc cgcagcttcc 2160 atttgctctt tggtgtaatc ttcatcgcca acatgaacta aatcaccatt ctcaacatct 2220 tcaagtttca aatcttgctt aatttgcttt aataatccac catagctgat ttgtcgtgtt 2280 ccagctaagg catactccaa atttttaatc accaccaaat tacgctcatc atcagccgtc 2340 atataatcag ctgattttac ctcgtatttc gccgtttctt cggcactagc ttgcaaagag 2400 teagtteett taegttigtt agetttaaca geetgeacat geaceacagg eteataatea 2460 actttcaagg ctttttgcca taattttgcc cattctgctt gtgctaaata attatttgaa 2520 ttottaaaat aacttgattt tacaaacago aacacatgca agtgttgatt atatgaccog 2580 tcttgttcat taacggtaat ttccgttgaa cgtaaataac ccaataaatt tttagtcact 2640 2700 tttttatagc gagttagctt attaaaggct ttagtcaaag ctcttaaaga cacttttaac 2760 tectetgetg aatgagegtt tttaaeggtt aaagttaaaa acaaaaaceg teetttagge tetettgeaa etgetteege aataatttgt tttaaetgge tegagttttt eatgeteett 2820 ctccaattac acaatggaca caatcgttta tgacaaaacc acgtttgata aagttttaag 2880 tgctcgccaa tcttacgaaa acgcaaaact tcaccacaac cccgtacatc atgtgcccgt 2940 ttaaatteta agattgeeaa atatteggea tagegeacat ttteaatett eegttetege 3000 caaggtctaa ctttgccatt ttcagtttta tcttcaaaaa tttctgacat aaaaagctcc 3060 tccagtttat ccacgtgaag gagctgacta tctttttcaa taagcttata accttgacat 3120 catagggett tteecetaga ataggetata aategeaaat gataateaae teaegtgtte 3180 cgagcggcca aactaggaat ttgcacgtgg gtttttattt tgtctttctt tcaaccaatt 3240 tataacceta ataatacace aaaageetat aaaateaatg gatacaagee caattaagee 3300











ttaacgatcg atgtaatcac tccttct